



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
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May 13, 2021

Mr. Michael Yox
Regulatory Affairs Director
Southern Nuclear Operating Company
7825 River Road, BIN 63031
Waynesboro, GA 30830

SUBJECT: VOGTLE ELECTRIC GENERATING PLANT, UNITS 3 AND 4 – NRC
INTEGRATED INSPECTION REPORTS 05200025/2021001,
05200026/2021001

Dear Mr. Yox:

On March 31, 2021, the U.S. Nuclear Regulatory Commission (NRC) completed an integrated inspection at the Vogtle Electric Generating Plant (VEGP), Units 3 and 4. The enclosed inspection report documents the inspection results, which the inspectors discussed on April 22, 2021, with Mr. Glen Chick, VEGP Units 3 and 4 Executive Vice President, and other licensee and contractor staff members.

The inspection examined a sample of construction activities conducted under your Combined License (COL) as it relates to safety and compliance with the Commission's rules and regulations and with the conditions of these documents. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

Based on the results of this inspection, no findings of significance were identified. This letter, its enclosure, and your response (if any) will be made available for public inspection and copying at <http://www.nrc.gov/reading-rm/adams.html> and at the NRC Public Document Room in accordance with 10 CFR 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Should you have any questions concerning this letter, please contact me at 404- 997-4510.

Sincerely,

/RA/

Nicole Coover, Branch Chief
Construction Inspection Branch 1
Division of Construction Oversight

Docket Nos.: 5200025, 5200026
License Nos: NPF-91, NPF-92

Enclosure:

NRC Inspection Report (IR) 05200025/2021001, 05200026/2021001
w/attachment: Supplemental Information

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SUBJECT: VOGTLE ELECTRIC GENERATING PLANT, UNITS 3 AND 4 – NRC
INTEGRATED INSPECTION REPORTS 05200025/2021001,
05200026/2021001 DATED: MAY 13, 2021

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U.S. NUCLEAR REGULATORY COMMISSION
Region II

Docket Numbers: 5200025
5200026

License Numbers: NPF-91
NPF-92

Report Numbers: 05200025/2021001
05200026/2021001

Licensee: Southern Nuclear Operating Company, Inc.

Facility: VEGP Units 3 and 4 Combined License

Location: Waynesboro, Ga

Inspection Dates: January 1 through March 31, 2021

Inspectors: A. Artayet, Senior Construction Inspector, Division of
Construction Oversight (DCO)
L. Castelli, Senior Construction Inspector, DCO
B. Kemker, Senior Resident Inspector, DCO
J. Lizardi-Barreto, Construction Inspector, DCO
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A. Ponko, Senior Construction Inspector, DCO

Approved by: Nicole Coover, Branch Chief
Construction Inspection Branch 1
Division of Construction Oversight

Enclosure

SUMMARY OF FINDINGS

Inspection Report (IR) 05200025/2021001, 05200026/2021001; 01/01/2021 through 03/31/2021; Vogtle Unit 3 Combined License, Vogtle Unit 4 Combined License, Integrated Inspection Report.

This report covers a three-month period of inspection by regional and resident inspectors, and announced inspections of Inspections, Tests, Analysis, and Acceptance Criteria (ITAAC) and quality assurance program implementation during construction. The NRC's program for overseeing the construction of commercial nuclear power reactors is described in Inspection Manual Chapter (IMC) 2506, Construction Reactor Oversight Process General Guidance and Basis Document.

A. NRC-Identified and Self Revealed Findings

None

B. Licensee-Identified Violations

None

REPORT DETAILS

Summary of Plant Construction Status

Unit 3: The licensee completed the majority of civil construction and was in the process of finalizing the as-built design for the nuclear island. In the containment and auxiliary buildings, the licensee continued with installation of safety related instrumentation, electrical conduits and cables (safety and non-safety related), necessary to support hot functional testing. In the turbine building, the licensee worked to complete plant systems to support hot functional testing.

Unit 4: The licensee continued construction of the shield building conical roof. In the containment building, the licensee continued with installation of reactor coolant system (RCS) and passive core cooling system (PXS) small bore piping and continued routing electrical raceways, cables, and terminations. In the auxiliary building, the licensee continued with construction of the building up to elevation 180-feet and continued with installation of electrical cabinets, raceways, conduits and cables (safety and non-safety related).

1. CONSTRUCTION REACTOR SAFETY

**Cornerstones: Design/Engineering, Procurement/Fabrication,
Construction/Installation, Inspection/Testing**

IMC 2503, Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC) - Related Work Inspections

1A01 (Unit 3) ITAAC Number 2.1.02.02a (13) / Family 06F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.1.02.02a (13). The inspectors used the following NRC inspection procedure (IP)/section to perform this inspection:

- 65001.06-02.01 - General Installation

The inspectors reviewed documents associated with Stone & Webster (S&W) work package SV3-RCS-P0W-1014474 for pipe installation of the inlet and outlet sides of pressurizer safety relief valves (SRVs) SV3-RCS-PL-V005A and SV3-RCS-PL-V005B that provide overpressure protection of the RCS. The inspectors reviewed associated documents to determine if the bolted flange joint connections to the inlet 6-inch and outlet 8-inch diameter pipe flanges were assembled in accordance with the requirements of the American Society of Mechanical Engineers (ASME) Code Section III, Subsection NB for Class 1 Components.

For SRVs with serial numbers N900028-00-0009 and -0010, the inspectors reviewed S&W piping installation data sheets to verify quality control (QC) hold points for identification/markings, material traceability (including bolts, nuts, and gaskets), internal cleanliness, and calibration of torquing tools that were deemed satisfactory and signed-off by QC inspectors in accordance with the requirements of the ASME Code Section III, Article NCA-3000 with final signatures by the authorized nuclear inspector (ANI).

The inspectors reviewed S&W bolted joint data sheets to verify QC hold points for alignment/fit-up of the gaskets and flanges and the sequential torquing, in gradual steps, to the final values were deemed satisfactory and signed-off by QC inspectors in accordance with the requirements of the ASME Code Section III, Paragraph NB-2128, and Section II, Part D, Subpart 1, Table 4 with final signatures by the ANI.

b. Findings

No findings were identified.

1A02 (Unit 3) ITAAC Number 2.5.02.07a (534) / Family 10E
(Unit 4) ITAAC Number 2.5.02.07a (534) / Family 10E

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.5.02.07a (534). The inspectors used the following NRC IPs/sections to perform this inspection:

- 40600-02.04 - ITAAC Maintenance Controls
- 65001.E-02.03 - Qualification
- 65001.E-02.04 - Documentation
- 65001.E-02.06 - Problem Identification and Resolution

On August 28, 2020, the licensee notified the NRC, via Event Number 54864, in accordance with 10 CFR 52.99(c)(2), that ITAAC 2.5.02.07a (534) and ITAAC 2.5.02.07e (538) for both units required additional actions to restore their completed status.

On August 26, 2020, the licensee determined a design change, issued for several protection and safety monitoring system (PMS) isolation barrier assemblies (ISBs), materially altered the basis for determining the ITAAC 534 and ITAAC 538 acceptance criteria were met. The modified ISBs will require testing per Institute of Electrical and Electronic Engineers (IEEE) 384-1981, IEEE Standard Criteria for Independence of Class 1E Equipment and Circuits.

The inspectors performed an inspection associated with implementation of field change notice (FCN) SV3-GW-GCW-654. The FCN was required to maintain the completed status of ITAAC 2.5.02.07a following the submittal of Unit 3 ITAAC closure notification ND-17-0572 (ADAMS accession number ML17093A286), which was originally submitted on March 31, 2017. The FCN was associated with the PMS and plant control system (PLS) 1E/non-1E isolation devices that prevent credible faults from propagating into the Class 1E PMS. During supplemental vendor testing of the isolation barriers a fault path was identified and limited to the non-1E side of the barrier. The FCN was issued to implement a hardware modification to address the fault path.

The inspectors reviewed the licensee's condition report (CR) 50054381 and corrective action record (CAR) 80002990, which documented the licensee review and resolution of engineering & design coordination report (E&DCR) APP-GW-GEF-2540. The E&DCR proposed an addition of a fuse harness to limit fault current on the Non-1E side of the isolation barriers. The inspectors reviewed the associated work order SV3-PMS-T0W-1222073 to verify test steps were established to furnish identifiable and retrievable evidence of post maintenance testing of the FCN.

The inspectors reviewed the E&DCR to verify the design changes made to the PMS/PLS isolation barrier were performed in accordance with 10 CFR Part 50 Appendix B, Criterion III, "Design Control." Specifically, the inspectors performed the review to verify the design change was subject to control measures commensurate with those applied to the original design and were approved by the original design organization. The inspectors reviewed the E&DCR to verify a justification was provided for the design change and the revised design was correctly translated into the updated design output documents. The inspectors reviewed factory acceptance test (FAT) APP-PMS-VPR-021 to verify the test results documented compliance with IEEE 384-1981, demonstrating the safety system was not degraded below an acceptable level as a result of maximum credible fault voltages. The inspectors reviewed all test anomalies to verify they had been described and dispositioned.

The inspectors reviewed APP-PMS-VBR-003 to verify addition of the hardware modification to the isolation barrier assembly was qualified for use in the PMS cabinets. Specifically, the inspectors verified the qualification evaluation was performed and documented and the results concluded no impacts on the environmental and seismic qualification.

The inspectors reviewed the licensee's ITAAC closure notification, ITAAC maintenance screening, and ITAAC maintenance impact technical evaluation (TE) 60014755 to verify ITAAC maintenance controls were implemented in accordance with ND-RA-001-009 and the ITAAC notification process conformed to the regulatory requirements of 10 CFR 52.99(c).

b. Findings

No findings were identified.

1A03 (Unit 3) ITAAC Number 2.5.02.07e (538) / Family 10D
(Unit 4) ITAAC Number 2.5.02.07e (538) / Family 10D

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.5.02.07e (538). The inspectors used the following NRC IPs /sections to perform this inspection:

- 40600-02.04 - ITAAC Maintenance Controls
- 65001.E-02.03 - Qualification
- 65001.E-02.04 - Documentation
- 65001.E-02.06 - Problem Identification and Resolution

On August 28, 2020, the licensee notified the NRC, via Event Number 54864, in accordance with 10 CFR 52.99(c)(2), that ITAAC 2.5.02.07a (534) and ITAAC 2.5.02.07e (538) for both units required additional actions to restore their completed status.

On August 26, 2020, the licensee determined a design change, issued for several PMS isolation barrier assemblies, materially altered the basis for determining the ITAAC 534 and ITAAC 538 acceptance criteria were met. The modified ISBs will require testing per IEEE 384-1981, IEEE Standard Criteria for Independence of Class 1E Equipment and Circuits.

The inspectors performed an inspection associated with implementation of FCN SV3-GW-GCW-654. The FCN was required to maintain the completed status of ITAAC 2.5.02.07e following the submittal of Unit 3 ITAAC closure notification ND-17-0572 (ADAMS accession number ML16351A350), which was originally submitted on November 30, 2016. The FCN was associated with the PMS and PLS 1E/non-1E isolation devices that prevent credible faults from propagating into the Class 1E PMS. During supplemental vendor testing of the isolation barriers a fault path was identified and limited to the non-1E side of the barrier. The FCN was issued to implement a hardware modification to address the fault path.

The inspectors reviewed the licensee's CR 50054381 and CAR 80002990, which documented the licensee review and resolution of E&DCR APP-GW-GEF-2540. The E&DCR proposed an addition of a fuse harness to limit fault current on the non-1E side of the isolation barriers. The inspectors reviewed the associated work order SV3-PMS-T0W-1222073 to verify test steps were established to furnish identifiable and retrievable evidence of post maintenance testing of the FCN.

The inspectors reviewed APP-PMS-VBR-003 to verify addition of the hardware modification to the isolation barrier assembly was qualified for use in the PMS cabinets. Specifically, the inspectors verified the qualification evaluation was performed and documented, and the results concluded no impacts on the environmental and seismic qualification.

The inspectors reviewed the E&DCR to verify the design changes made to the PMS/PLS isolation barrier were performed in accordance with 10 CFR Part 50 Appendix B, Criterion III, "Design Control". Specifically, the inspectors performed the review to verify the design change was subject to control measures commensurate with those applied to the original design and were approved by the original design organization. The inspectors reviewed the E&DCR to verify a justification was provided for the design change and the revised design was correctly translated into the updated design output documents. The inspectors reviewed FAT APP-PMS-VPR-021 to verify the test results documented compliance with IEEE 384-1981, demonstrating the safety system was not degraded below an acceptable level as a result of maximum credible fault voltages. The inspectors reviewed all test anomalies to verify they had been described and dispositioned.

The inspectors reviewed the licensee's ITAAC closure notification, ITAAC maintenance screening, and ITAAC maintenance impact TE 60014763 to verify ITAAC maintenance controls were implemented in accordance with ND-RA-001-009 and the ITAAC notification process conformed to the regulatory requirements of 10 CFR 52.99(c).

b. Findings

No findings were identified.

1A04 (Unit 4) ITAAC Number 2.1.02.02a (13) / Family 06F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.1.02.02a (13). The inspectors used the following NRC IP/sections to perform this inspection:

- 65001.B-02.04 - Production Controls
- 65001.B-02.05 - Inspection
- 65001.B-02.06 - Records

The inspectors reviewed welding and QC inspection documents to verify welding activities associated with the Unit 4 RCS was performed by PCI Energy Services (PCI) in accordance with the requirements of the 1998 Edition including 2000 addenda of the ASME Code Section III, Subsections NCA and NB. The inspectors reviewed manual gas tungsten arc welding (GTAW) records for the upper fillet weld (FW-No. 01) on the reactor coolant pump (RCP) 2B canopy seal ring and ASME Code data plate. The inspectors reviewed the PCI weld process travelers to verify traceability of the 3/32" and 1/8" diameter ER308L bare stainless weld rods and welders were maintained in accordance with NB-4122 and NB-4300.

The inspectors also reviewed entries of weld process travelers with supporting inspection records to verify whether QC and ANI inspection hold points were dated and signed-off as acceptable for material identification, cleanliness, fit-up and gap measurements, and stud stretch in accordance with NCA-4134.10 and NB-4230. In addition, the inspectors verified the required minimum preheat and interpass temperatures were recorded in accordance with PCI welding procedure specification (WPS) 8MN-GTAW-RCP Canopy. The inspectors also reviewed the canopy seal weld process traveler to verify visual inspections during fit-up and liquid penetrant examination of the circumferential fillet weld were performed and deemed acceptable in accordance with Article NB-5000.

b. Findings

No findings were identified.

1A05 (Unit 4) ITAAC Number 3.3.00.02a.i.b (761) / Family 01F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 3.3.00.02a.i.b (761). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.02-02.01 - Inspection of Concrete Placement
- 65001.F - Inspection of the ITAAC-Related Design and Fabrication Requirements
- 65001.F-02.01 - Design Document Review

The inspectors observed in progress installation of the radial, circumferential, and transverse reinforcing bars installed on representative segments of the conical roof slab between the tension ring and approximately five feet below the knuckle region to verify the sizes, spacing, material designation, grade, lap splices, and layout of the bars were consistent with the applicable design drawings, E&DCRs, construction specification SV4-CC01-Z0-31, and American Concrete Institute (ACI) 349-01.

The inspectors reviewed two E&DCRs to verify that design changes were performed in accordance with 10 CFR Part 50 Appendix B, Criterion III, "Design Control." Specifically, the inspectors verified the design changes were subject to control measures commensurate with those applied to the original design and were approved by the organization that performed the original design or the designated responsible organization. The inspectors also reviewed the E&DCR to verify a technical justification was provided for the design change, deviations from applicable quality standards such as ACI 349-01 were controlled, and the revised design was correctly translated into the updated design output documents.

b. Findings

No findings were identified.

1A06 (Unit 4) ITAAC Number 3.3.00.02a.i.b (761) / Family 01F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 3.3.00.02a.i.b (761). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.01 - Inspection of ITAAC-Related Foundations & Buildings
- 65001.01-02.05 - Steel Structures
- 65001.B-02.03 - Welder Qualification
- 65001.B-02.04 - Production Controls
- 65001.F-02.01 - Design Document Review

The inspectors observed the welds between the Unit 4 conical roof built-up radial girders and the stiffened beam seats attached to the tension ring to verify the weld types and dimensions were consistent with the calculations, design drawings, and E&DCRs. The inspectors also reviewed two welder qualification records to verify the welders making these welds were qualified to do so in accordance with American Welding Society (AWS) D1.1:2000. The inspectors noted the welders were all qualified in accordance with ASME Section IX which is allowed by AWS D1.1:2000 Section 4.1.2.1 and approved by the design authority in E&DCR APP-SS01-GEF-850170. Additionally, the inspectors reviewed the filler metal certificate of conformance to verify the material being used for completing the welds was consistent with WPS 181816-000-WS-SP-E8018.

The inspectors reviewed three E&DCRs to verify that design changes were performed in accordance with 10 CFR Part 50 Appendix B, Criterion III, "Design Control." Specifically, the inspectors verified the design changes were subject to control measures commensurate with those applied to the original design and were approved by the organization that performed the original design or the designated responsible organization. The inspectors also reviewed the E&DCR to verify a technical justification was provided for the design change, deviations from applicable quality standards such as AISC N690-94 and AWS D1.1-2000 were controlled, and the revised design was correctly translated into the updated design output documents.

b. Findings

No findings were identified.

1A07 (Unit 4) ITAAC Number 3.3.00.02a.i.d (763) / Family 01F

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 3.3.00.02a.i.d (763). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.02-02.01 - Inspection of Concrete Placement
- 65001.F - Inspection of the ITAAC-Related Design and Fabrication Requirements
- 65001.F - 02.01-Design Document Review

The inspectors observed in progress construction of a portion of auxiliary building floor in Area 4 between the shield building cylindrical wall and the walls along column lines 4, 4.8, and I at 135'-3". Specifically, the inspectors observed the installation of the main top and bottom reinforcing bars in the reinforced concrete slab to verify the sizes, spacing, material designation, grade, lap splices, and layout of the bars were consistent with the applicable design drawings, E&DCRs, construction specification SV4-CC01-Z0-31, and ACI 349-01.

The inspectors reviewed E&DCR APP-CR01-GEF-850562 to verify design changes made to the slab were performed in accordance with 10 CFR Part 50 Appendix B, Criterion III, "Design Control." Specifically, the inspectors verified the design changes were subject to control measures commensurate with those applied to the original design and were approved by the organization that performed the original design or the designated responsible organization. The inspectors also reviewed the E&DCRs to verify a technical justification was provided for the design change, deviations from applicable quality standards such as ACI 349-01 were controlled, and the revised design was correctly translated into the updated design output documents.

b. Findings

No findings were identified.

IMC 2504, Construction Inspection Program – Inspection of Construction and Operational Programs

1P01 Construction Quality Assurance (QA) Criterion 16

- 35007-A16.04.02 - Inspection of QA Program Implementation

a. Inspection Scope

The inspectors reviewed the design change for removal of the PXS gutter support plate that was initiated by CR 50077337 to verify the change was performed by the responsible engineer in accordance with procedure APP-GW-GAP-420, "Engineering and Design Coordination Report." The inspectors also reviewed the E&DCR to verify the proper level of engineering reviews was performed and approved changes were incorporated into the affected documents.

The inspectors reviewed the E&DCR to verify the elimination of the gutter gusset support plate was evaluated with the supporting justification calculations. The inspectors also evaluated the calculations to verify consistency against the original calculations provided in APP-1100-S3C-001, "PXS Gutter – Structural Calculations." The inspectors reviewed the following for the non-ASME justification calculations to determine if the gutter was structurally sound without the gusset support: inputs and their sources, background data, assumptions, material and sectional properties with dimensions, weights and loading conditions, seismic rigidity and acceleration checks, service deflections, design stresses allowable by AISC N690, and combined stress ratio. Additionally, the inspectors reviewed the design verification for the plate removal justification to verify it was performed by individuals other than those who performed the original design; and reviewed marked-up drawing APP-MT73-SS-001 with the PXS gutter gusset support plate deletion.

The inspectors reviewed the Unit 3 and 4 work packages to verify the implementation of the design change with elimination of the PXS gutter gusset support plate was done in accordance with the E&DCR. In addition, the inspectors performed a walkdown with the field engineer of the Unit 4 PXS gutter system to verify the PXS gutter was installed without the PXS gutter gusset support plate to meet the requirements of E&DCR.

The inspectors performed a review of the design information presented in the E&DCR with justification calculations and assumptions to verify the gutter remained structurally sound without the support plate and resulted in a seismically rigid structure.

b. Findings

No findings were identified.

1P02 Construction QA Criterion 16

- 35007-A16.04 - Inspection Requirements and Guidance
- 35007-A16.04.01 - Inspection of QA Implementing Documents
- 35007-A16.04.02 - Inspection of QA Program Implementation

a. Inspection Scope

The inspectors reviewed issues, entered into the licensee's corrective action program (CAP), to assess issues that might warrant additional follow-up inspection, to assess repetitive or long term issues, to assess adverse performance trends, and to verify the CAP appropriately included regulatory required non-safety related structures, systems, and components (SSCs). The inspectors periodically attended the licensee's CAP review meetings, held discussions with licensee and contractor personnel, and performed reviews of CAP activities during the conduct of other baseline inspection procedures. The inspectors reviewed conditions entered into the licensee's CAP to determine whether the issues were classified in accordance with the licensee's quality assurance program and CAP implementing procedures.

The inspectors reviewed corrective actions associated with conditions entered into the CAP to determine whether appropriate actions to correct the issues were identified and implemented effectively, including immediate or short-term corrective actions, in accordance with the applicable quality assurance program requirements and 10 CFR 50, Appendix B, Criterion XVI. Additionally, the inspectors reviewed the corrective actions taken to determine whether they were commensurate with the significance of the associated conditions in accordance with the licensee's CAP implementing procedures. The inspectors completed reviews of CAP entry logs to verify issues from aspects of the project, including equipment, human performance, and program issues, were being identified by the licensee and its contractors at an appropriate threshold and entered into the CAP as required by licensee's CAP implementing procedures.

b. Findings

No findings were identified.

1P03 Construction QA Criterion 5

- 35007-A5 - Appendix 5. Inspection of Criterion V – Instructions, Procedures, and Drawings
- 35007-A5.04 - Inspection Requirements and Guidance
- 35007-A5.04.02 - Inspection of QA Program Implementation

a. Inspection Scope

The inspectors performed an inspection of nonconformances identified with the installation of the cable tray system in the Unit 3 auxiliary building. Specifically, bolts at some splice plate connections were not installed in accordance engineering drawings. In some instances, the bolt heads were not seated flush with the cable tray side rail. In other instances, the bolts were over-torqued forcing the head to seat, then loosened and torqued to the correct design value.

b. Findings

Introduction

The inspectors identified an unresolved item (URI) associated with nonconformances identified in the installation of the cable tray system in the Unit 3 auxiliary building. This URI is being opened to determine if the performance deficiency is of more-than-minor significance.

Description

The inspectors reviewed E&DCRs APP-SH25-GEF-850014 and APP-SH25-GEF-850017. Based on this review, the inspectors determined the design of the cable tray splice connections assumed the bolts clamped the splice plates firmly to the cable tray side rail. The inspectors reviewed the AP1000 Electrical Installation Specification. This specification stated that cable tray installation shall be per the engineering drawings, APP-ECS-E9-Series. The inspectors reviewed the typical connection details depicted on drawing SV3-ECS-E9-012-R8. Typical details of Seismic Category I Cable Tray Splice Plates for HDGAF Metal (B-Line) Cable Trays were provided in details T21, T22, T22A, and T22B on SV3-ECS-E9-012-R8. These details required the nuts of the bolts used in the connections to be tightened to 19 ft-lbs and did not specify a permissible gap between the bolt head and the cable tray side rail or the plies of the connection. Additionally, these details did not provide leeway to tighten the bolts more than the specified value. Standard practices for the installation of structural bolted connections are to tighten the bolts to bring the faying surfaces into contact with one another prior to applying any required pre-tensioning. Failure to follow these practices may result in some bolts in the connection not achieving the required torque.

The inspectors determined the licensee's failure to install the splice plate connections in accordance with the engineering drawing was a performance deficiency.

10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings" states, in part, that activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings. Design Specification, APP-G1-V8-001, "AP1000 Electrical Installation Specification," Revision 8, Section 3.4.2 states, in part, that cable tray installation shall be per the engineering drawings, APP-ECS-E9-Series. Contrary to the above, connections between cable tray sections were not accomplished per the engineering drawing as evidenced by the following:

1. Not all the bolts used in the connections of cable trays SV3-1242-ER-AZT04B, SV3-1212-ER-AYT01D, and SV3-1212-ER-AYT01F were fully seated and in firm contact with the cable tray as required by details T21, T22, T22A, and T22B on design drawing SV3-ECS-E9-012-R8.
2. In some instances, additional tension above the required 19 ft-lbs specified in details T21, T22, T22A, and T22B on design drawing SV3-ECS-E9-012-R8 was used to get bolt heads fully seated.

The inspectors determined this performance deficiency was not material to the acceptance criteria of an ITAAC. However, an URI has been opened pending completion and review of the licensee's extent of condition survey and a bounding engineering evaluation. The inspectors will use this information to assist in determining whether the performance deficiency is of more-than-minor significance. The licensee entered this issue into its CAP for evaluation and determination of appropriate corrective actions (CR 50078244). **(URI 05200025/2021001-01, Raceway Splice Plates Not Installed in Accordance with Instructions)**

1P04 Construction QA Criterion 5

- 35007-A5 - Appendix 5. Inspection of Criterion V – Instructions, Procedures, and Drawings
- 35007-A5.04 - Inspection Requirements and Guidance
- 35007-A5.04.02 - Inspection of QA Program Implementation

a. Inspection Scope

The inspectors performed an inspection of nonconformances identified in the installation of the cable tray system in the Unit 3 auxiliary building. Specifically, some connections between cable tray systems carrying safety-related cables and structural supports were not installed in accordance with engineering drawings. In some instances, clips specified for horizontal sections of cable trays were used to brace vertical cable tray sections without approval of the design authority. In other instances, nuts used in bolted connections did not have full thread engagement and the clips were deformed plastically during installation. Examples of these conditions were found at the following locations: SV3-1232-SH-E1403, SV3-1232-SH-E1404, and SV3-1232-ER-C2TOZA.

b. Findings

Introduction

The inspectors identified an URI associated with nonconformances identified in the installation of the cable tray system in the Unit 3 auxiliary building. This URI is being opened to determine if the performance deficiency is of more-than-minor significance.

Description

The inspectors reviewed the AP1000 Electrical Installation Specification. This specification stated that cable tray installation shall be per the engineering drawings, APP-ECS-E9-Series. The inspectors reviewed the typical connection notes and details depicted on drawings SV3-ECS-E9-062-R2 and SV3-ECS-E9-064-R0 and pictures of the connections at the locations where the nonconformances were identified. Based on this review, the inspectors determined a cable tray hold down clamp specified for horizontal cable trays was used for vertical cable tray section SV3-1232-ER-CZT02A at support SV3-1232-SH-E1403. The inspectors also determined two nuts used in a bolted angle connection between cable tray section SV3-1232-SH-E1404 and a support lacked proper thread engagement as defined in Note 2.8(B) on drawing SV3-ECS-E9-062-R2 and the angle was deformed plastically during installation. Note 2.8(B) on SV3-ECS-E9-062-R2 states, in part, that bolts are acceptable as long as the bolt length selected achieves a minimum of one full thread above the associated nut. A typical detail of a cable tray expansion guide for horizontal Seismic Category I HDGAF steel solid through cable trays is provided in detail T04A on SV3-ECS-E9-064-R0.

The inspectors determined the licensee's failure to install the connections between the cable tray system and the structural supports in accordance with the engineering drawings was a performance deficiency.

10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings" states, in part, that activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings. Design Specification, APP-G1-V8-001, "AP1000 Electrical Installation Specification," Revision 8, Section 3.4.2 states, in part, that cable tray installation shall be per the engineering drawings, APP-ECS-E9-Series. Contrary to the above, connections between cable tray sections and supports were not accomplished per the engineering drawing as evidenced by the following:

1. Two nuts used in a bolted angle connection between cable tray section SV3-1232-SH-E1404 and a support lacked proper thread engagement as defined in Note 2.8(B) on drawing SV3-ECS-E9-062-R2 and the angle was deformed plastically during installation.
2. Detail T04A on SV3-ECS-E9-064-R0 is not specified for vertical cable trays. However, it was used for vertical cable tray section SV3-1232-ER-CZT02A at support SV3-1232-SH-E1403.

The inspectors determined this performance deficiency was not material to the acceptance criteria of an ITAAC. However, an URI has been opened pending completion and review of the licensee's extent of condition survey and a bounding engineering evaluation. The inspectors will use this information to assist in determining whether the performance deficiency is of more-than-minor significance. The licensee entered this issue into its CAP for evaluation and determination of appropriate corrective actions (CR 50083755). **(URI 05200025/2021001-02, Cable Tray Connections to Supports Not Installed in Accordance with Instructions).**

1P05 Construction QA Criterion 5

- 35007-A5 - Appendix 5. Inspection of Criterion V – Instructions, Procedures, and Drawings
- 35007-A5.04 - Inspection Requirements and Guidance
- 35007-A5.04.02 - Inspection of QA Program Implementation

a. Inspection Scope

The inspectors performed an inspection of the installation of junction boxes in the Unit 3 electrical raceway system. Specifically, the inspectors reviewed quality records, including the design specification, work packages, inspection records, nonconformance reports, engineering service requests, CRs, procedures, vendor manuals, and drawings to verify:

- the design was implemented in accordance with regulatory requirements, including applicable sections of the Updated Final Safety Analysis Report and the IEEE standards;
- differences between the as-built configuration and the design were reconciled in the design report;
- the design drawings were revised to reflect the as-built configuration by qualified personnel;
- issues identified during the inspection were entered into the CAP in accordance with the CAP requirements;
- design changes were evaluated and implemented in accordance with established site procedures; and
- design deviations or nonconforming conditions were identified, documented, and dispositioned in accordance with site procedures.

b. Findings

Introduction

The inspectors identified an URI associated with non-conformances identified with the installation of junction boxes in the Unit 3 electrical raceway system. Specifically, it was identified that two out of four spring nuts from junction box SV3-1232-ER-CZP08, and later observed on junction box SV3-1232-ER-CZP04, were not properly seating within the Unistrut channel supports. This URI is being opened to determine if the performance deficiency is material to the acceptance criteria of an ITAAC.

Description

The inspectors identified that two out of four bolting connections for junction box SV3-1232-ER-CZP08 had misaligned spring nuts and the licensee initiated CR 50075790 to address this condition. CR 50075381 was also initiated on January 21, 2021 for a misaligned spring nut identified within the connections of junction box SV3-1232-ER-CZP04. Specifically, the inspectors identified that steps 3290 and 3300 of work package SV3-1232-ERW-1021720 required installation per SV3-G1-V8-001 and SV3-ECS-E9-Series to satisfy design requirements. SV3-ECS-E9-030, Note 3.3, stated, in part, that “bolts shall be installed and torqued pursuant to the manufacturer’s requirements for the type of fitting and bolt size.” Manufacturer’s requirements specified the serrated teeth of the nut are designed to lock “into the in-turned edges of the Unistrut channels, to complete a strong, vise-like connection.” These spring nuts were not properly seating or aligned in the Unistrut supports and were already QC inspected and accepted during the installation of these junction boxes.

The inspectors determined the licensee's failure to install safety-related junction boxes in accordance with design specifications APP-G1-E1-003, SV3-G1-V8-001, vendor requirements and work order instruction SV3-1232-ERW-1021720 is a performance deficiency. ESR 50076220 was also initiated to evaluate the as-built condition. Westinghouse evaluation SVP-SV0-006208, "Evaluation of Junction Box SV3-1232-ER-CZP08 for ESR 50076220," determined the two misaligned spring nuts did not impact the junction box's ability to perform its safety-related function. However, Unistrut spring nuts are commonly used as component supports, therefore CR 50077190 was initiated to determine the effect, causes, and extent-of-condition of misaligned spring nuts on other safety-related components and/or ITAAC-related SSCs.

On March 8, 2021, the inspectors determined the conditions adverse to quality identified in CRs 50004237 and 50075381, which dealt with spring nuts not properly seating on Unistrut supports for junction boxes, was a performance deficiency. An URI was opened to determine whether the performance deficiency is material to the acceptance criteria of an ITAAC. In response, the licensee opened CR 50083759 to address this concern. **(URI 05200025/2021001-03, Misaligned Spring Nuts in Junction Boxes).**

4. OTHER INSPECTION RESULTS

4OA6 Meetings, Including Exit

.1 Exit Meeting.

On April 22, 2021, the inspectors presented the inspection results to Mr. Glen Chick, Vogtle 3&4 Executive Vice President, and other licensee and contractor staff members. Proprietary information was reviewed during the inspection period but was not included in the inspection report.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee and Contractor Personnel

R. Beilke, ITAAC Project Manager
C. Castell, SNC Licensing Engineer
N. Kellenberger, SNC Licensing Supervisor
S. Leighty, SNC Licensing Supervisor
T. Petrak, SNC ITAAC Manager
L. Pritchett, SNC Licensing Engineer
K. Roberts, SNC, Licensing Manager
G. Scott, SNC Licensing Engineer
M. Yox, SNC Regulatory Affairs Director

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

<u>Item Number</u>	<u>Type</u>	<u>Status</u>	<u>Description</u>
05200025/2021001-01	URI	Open	Raceway Splice Plates Not Installed in Accordance with Instructions (Section 1P03)
05200025/2021001-02	URI	Open	Cable Tray Connection to Supports Not Installed in Accordance with Instructions (Section 1P04)
05200025/2021001-03	URI	Open	Misaligned Spring Nuts in Junction Box (Section 1P05)

LIST OF DOCUMENTS REVIEWED

Section 1A01

SV3-RCS-M6-002-R6, "Piping and Instrumentation Diagram Reactor Coolant System," Revision 6
S&W Work Package SV3-RCS-P0W-1014474, "ASME Section III - Install Relief Valves SV3-RCS-PL-V005A and SV3-RCS-PL-V005B Upon Completion of Hydro and Flushing," Revision 0
S&W Piping Installation Data Sheet SV3-RCS-PLW-01K, "Install Relief Valve SV3-RCS-PL-V005A," 01/06/2021
S&W Bolted Joint Data Sheet SV3-RCS-PLW-01K-1-BC, "Install Relief Valve SV3-RCS-PL-V005A," 01/06/2020
S&W Bolted Joint Data Sheet SV3-RCS-PLW-01K-2-BC, "Install Relief Valve SV3-RCS-PL-V005A," 01/06/2020

S&W Piping Installation Data Sheet SV3-RCS-PLW-01L, "Install Relief Valve SV3-RCS-PL-V005B," 01/06/2021

S&W Bolted Joint Data Sheet SV3-RCS-PLW-01L-1-BC, "Install Relief Valve SV3-RCS-PL-V005B," 01/06/2020

S&W Bolted Joint Data Sheet SV3-RCS-PLW-01L-2-BC, "Install Relief Valve SV3-RCS-PL-V005B," 01/06/2020

Section 1A02

CR 50054381, "WEC CAP 2020-5019 Dataforth Isolation Barrier – Missed Fault Path"

CAR 80002990, "WEC CAP 2020-5019 Dataforth Isolation Barrier - Missed Fault Path"

SV3-GW-GCW-654, "SV3 PMS BCC and MTC ISB Fuse Retrofit FCN," Revision 0

APP-GW-GAP-2540, "E&DCR Isolation Barrier Modification," Revision 0

Work Order SV3-PMS-T0W-1222073, "Implement FCN SV3-GW-GCW-654: SV3 PMS BCC and MTC ISB Fuse Retrofit FCN"

Work Order SV4-PMS-T0W-1224340, "Implement FCN SV4-GW-GCW-655: SV4 PMS BCC and MTC ISB Fuse Retrofit FCN"

APP-PMS-VPR-021, "AP1000 PMS Isolation Barrier Maximum Credible Fault Test Report," Revision 0

APP-PMS-VBR-003, "Equipment Qualification Summary Report for PMS Cabinets and NIS Auxiliary Panels for Use in the AP1000 Plant," Revision 11

APP-PMS-VBR-015, "API 000 Protection, on and Safety Monitoring System Isolation Summary Report for Use in the API 000 Plant," Revision 3

CAP IR-2020-5019, "Dataforth Isolation Barrier Testing, Westinghouse Electric Company LLC"

ND-RA-001-009, "NRC Notifications Including Requirements for ITAAC Maintenance," Version 10.1

Section 1A03

CR 50054381, "WEC CAP 2020-5019 Dataforth Isolation Barrier – Missed Fault Path"

CAR 80002990, "WEC CAP 2020-5019 Dataforth Isolation Barrier - Missed Fault Path"

SV3-GW-GCW-654, "SV3 PMS BCC and MTC ISB Fuse Retrofit FCN," Revision 0

APP-GW-GAP-2540, "E&DCR Isolation Barrier Modification," Revision 0

Work Order SV3-PMS-T0W-1222073, "Implement FCN SV3-GW-GCW-654: SV3 PMS BCC and MTC ISB Fuse Retrofit FCN Unit 3"

Work Order SV4-PMS-T0W-1224340, "Implement FCN SV4-GW-GCW-655: SV4 PMS BCC and MTC ISB Fuse Retrofit FCN"

APP-PMS-VPR-021, "AP1000 PMS Isolation Barrier Maximum Credible Fault Test Report," Revision 0

APP-PMS-VBR-003, "Equipment Qualification Summary Report for PMS Cabinets and NIS Auxiliary Panels for Use in the AP1000 Plant," Revision 11

APP-PMS-VBR-015, "API 000 Protection, on and Safety Monitoring System Isolation Summary Report for Use in the API 000 Plant," Revision 3

CAP IR-2020-5019, "Dataforth Isolation Barrier Testing, Westinghouse Electric Company LLC"

ND-RA-001-009, "NRC Notifications Including Requirements for ITAAC Maintenance," Version 10.1

Section 1A04

PCI Energy Services Quality Assurance Traveler 915702-002 [includes Weld Process Travelers for seal ring and ASME Code Data Plate with attached records for weld gap measurements and stud stretch, M&TE/due dates, preheat/interpass monitoring, visual and liquid penetrant nondestructive examination, and RCP seal weld map] for Vogtle Unit 4 "RCP-2B Upper Canopy Seal Weld for Steam Generator B," (26 pages), Revision 0, 01/23/2020

Section 1A05

Specifications

SV3-CC01-Z0-031, "Safety Related Placing Concrete and Reinforcing Steel, Westinghouse Seismic Category I, Safety Class C 'NUCLEAR SAFETY'", Revision 8

Drawings

SV4-0000-C9-001, "AP1000 Concrete General Notes," Revision 9
SV4-0000-C9-002, "AP1000 Concrete General Notes," Revision 9
SV4-1278-CC-001-R1, "Shield Building Roof Section A-A"
SV4-1278-CCK-007-R0, "Shield Building Conical Roof Construction Joint Location Section A-A"
SV4-1278-CR-010-R1, "Conical Roof Concrete Reinforcement Plan View General Arrangement – Bottom Layers"
SV4-1278-CR-011-R2, "Conical Roof Concrete Reinforcement Plan View General Arrangement – Wall Connection"
SV4-1278-CR-012-R1, "Conical Roof Concrete Reinforcement Plan View General Arrangement – Top Layers"
SV4-1278-CR-013-R1, "Conical Roof Concrete Reinforcement Bottom (Radial)"
SV4-1278-CR-014-R1, "Conical Roof Concrete Reinforcement Bottom Reinforcement Detail 2"
SV4-1278-CR-015-R1, "Conical Roof Concrete Reinforcement Bottom Reinforcement Details 3,4"
SV4-1278-CR-016-R1, "Conical Roof Concrete Reinforcement Bottom Reinforcement (Circumferential)"
SV4-1278-CR-017-R1, "Conical Roof Concrete Reinforcement Top Reinforcement (Circumferential)"
SV4-1278-CR-018-R1, "Conical Roof Concrete Reinforcement Top Reinforcement (Radial) Exposed Roof"
SV4-1278-CR-019-R1, "Conical Roof Concrete Reinforcement Top Reinforcement Detail 5"
SV4-1278-CR-020-R1, "Conical Roof Concrete Reinforcement Top Reinforcement Detail 6"
SV4-1278-CR-021-R1, "Conical Roof Concrete Reinforcement Top Reinforcement (Radial) Not Exposed Roof"
SV4-1278-CR-022-R1, "Conical Roof Concrete Reinforcement Top Reinforcement Details 7,8"
SV4-1278-CR-023-R1, "Conical Roof Concrete Reinforcement Top Reinforcement Details 9,10"
SV4-1278-CR-024-R2, "Conical Roof Concrete Reinforcement Section A-A – Radial and Vertical Bars Arrangement"
SV4-1278-CR-025-R1, "Conical Roof Concrete Reinforcement Section B-B – Circumferential Bars Arrangement"

Shop Drawings

SV4-CR01-801385-R0, "Conical Shield Roof – Bot. Layer – 1st Course"
SV4-CR01-801386-R0, "Conical Shield Roof – Bot. Layer – Second Course"
SV4-CR01-801389-R0, "Conical Shield Roof – Top Layer – First Course"
SV4-CR01-801390-R0, "Conical Shield Roof – Top Layer – Second Course"
SV4-CR01-801391-R0, "Conical Shield Roof – Top Layer – Third Course"
SV4-CR01-801403-R0, "Conical Shield Roof Radial Reinf. – Bot. Layer"
SV4-CR01-801404-R0, "Conical Shield Roof Radial Reinf. – Top Layer C1 & C2"
SV4-CR01-801448-R0, "PCS Tank Wall"
SV4-CR01-801499-R0, "Shield Bldg – Compression Ring CB20 Transition"
SV4-CR01-801502-R0, "Shield Bldg – Conical Roof Stirrups – LYR E1-E-E3"

Engineering and Design Coordination Reports (E&DCRs)

SV0-1278-GEF-000014, "SB Conical Roof Reinforcement Configuration Changes (EFIN34120)," Revision 0
APP-1278-GEF-850137, "Clarification of Shield Bldg Roof Crossties Layers E1, E2 & E3 (ESR 50043773)," Revision 0
APP-FSAR-GEF-157, "Shield Building Conical Roof. Radial Girders connection reinforcement. Revised design," Revision 0

Section 1A06

Drawings

SV4-1278-SS-004-R3, "Shield Building Roof Area 8 Conical Roof Structural Outline and Concrete Typical Section"
SV4-1278-SS-005-R3, "Shield Building Roof Area 8 Conical Roof Structural Framing Plan I"
SV4-1278-SS-006-R3, "Shield Building Roof Area 8 Conical Roof Structural Framing Plan II"
SV4-1278-SS-009-R3, "Shield Building Roof Area 8 Conical Roof Section A-A"
SV4-1278-SS-010-R3, "Shield Building Roof Area 8 Conical Roof Section B-B"
SV4-1278-SS-018-R3, "Shield Building Roof Area 8 Conical Roof Standard Structural Details I"
SV3-1278-SS-021-R3, "Shield Building Roof Area 8 Conical Roof Standard Weld Details I"

E&DCRs:

APP-SS01-GEF-850170, "ASME IX - SS01/CE01," Revision 0
APP-1278-GEF-850071, "Conical Roof to Tension Ring Welded Connection Changes," Revision 0
APP-1278-GEF-850116, "SB Roof Girder Bearing Requirements," Revision 0
Welding Procedure Specification 181816-000-WS-SP-E8018, Revision 3
Certificate of Conformance and Certified Material Test Report, 3/16 Excalibur 8018-C1 MR 50EO, Q3 Lot 1419G
Welder Performance Qualification Record for Welder ID KAM2596
Welder Performance Qualification Record for Welder ID LJW4312

Section 1A07

Specifications

SV4-CC01-Z0-031, "Safety Related Placing Concrete and Reinforcing Steel," Revision 8

Drawings

SV4-0000-C9-001, "AP1000 Concrete General Notes," Revision 9
SV4-0000-C9-002, "AP1000 Concrete General Notes," Revision 9
SV4-1254-CC-405-R4, Auxiliary Building Concrete Outline Area 4 Floor El 135'-0" & 135'-3"
SV4-1050-CR-102-R1, Auxiliary Building Concrete Reinforcement Slab Joint Rebar to Connect with the Shield Building El. 135'-3" (Sheet 2)"
SV4-1240-CR-997-R6, "Auxiliary Building Concrete Reinforcement Secondary Walls Sections & Details"
SV4-1250-CR-345-R4, Auxiliary Building Areas 3 & 4 Concrete Reinforcement Floor El. 135'-3" Plan View"
SV4-1250-CR-385-R1, Auxiliary Building Areas 3 & 4 Concrete Reinforcement Floor El. 135'-3" Details (Sheet 2)"
SV4-1250-CR-395-R4, Auxiliary Building Areas 3 & 4 Concrete Reinforcement Floor El. 135'-3" Details (Sheet 1)"

E&DCRs:

APP-CR01-GEF-850562, "Floor Reinforcing SP-43_SP43A (ESR 50019656)," Revision 0

Section 1P01

Condition Report:

CR 50077337, "PXS Gutter Gusset Support Plate Not Installed"

E&DCRs:

SV0-MT73-GEF-003, "Remove PXS Gutter Support at Personnel Airlock (ESR 50077154)" with Attachment B "Justification Calculation," Revision 0
APP-MT73-SS-001, "AP1000 PXS Gutter Details" (Attachment A of E&DCR) with markup deletions to original Revision 4, 12/18/2013
WEC APP-1100-S3C-001, "PXS Gutter-Structural Calculations," Revision 1

Work Packages:

SV3-MT73-MTW-1021094, "U3-CT-Install MT73-PXS Gutter System SV3-PXS-MT-04 SV3-11400," Revision 0
SV4-MT73-MTW-1044568, "U4-CT Install MT73 PXS Gutter System SV4-PXS-MT04," Revision 0

Section 1P02

APP-GW-GAP-420, "Engineering and Design Coordination Reports," Revision 20
APP-GW-GAP-428, "Nonconformance and Disposition Report," Revision 18
ND-AD-002, "Nuclear Development Program Corrective Action Program," Revision 7.0
ND-AD-002-025, "Issue Identification, Screening, and Dispatching," Revision 5.0
ND-AD-002-026, "Corrective Action Program Processing," Revision 4.0
ND-AD-002-027, "Nonconforming Items," Revision 8.0

Section 1P03

E&DCRs

APP-SH25-GEF-850014, "Design Clarification for SC-I and SC-II Cable Tray Splice Plate Details T21 and T22," Revision 0

APP-SH25-GEF-850017, "Review of SC-I & SC-II B-Line Fixed Splice Plate," Revision 0

APP-G1-E1-003, "Raceway Design Criteria," Revision 4

Drawings

SV3-ECS-E9-012-R8, "Cable Tray Notes and Details Sheet 3"

SV3-ECS-E9-013-R6, "Cable Tray Notes and Details Sheet 4"

SV3-ER01-Z0-003-R1, "Class 1E Cable Tray and Fittings"

SV3-G1-V8-001-R8, "AP1000 Electrical Installation Specification"

SVP_SV0_006155, "Evaluation of Vogtle Unit 3 Cable Tray Splice Bolt Nonconformance," 01/15/2021

ESR 50060884

26139-000-4MP-T81C-N3302, "Raceway and Accessories," Revision 11

QCI No. 26139-000-2QI-Q07C-N3302, "Raceway and Accessories," Revision 5

CR 50071282

CR50074711

WP No. SV3-1212-ERW-EL1618, "Raceways and Accessories Inspection Record"

WP No. SV3-1212-ERW-EL1618, "Raceways and Accessories Inspection Record Continuation Sheet"

WP No. SV3-1242-ERW-1034028, "Work Scope Instructions"

WP No. SV3-1242-ERW-1034028 Attachment B, "Raceways and Accessories Inspection Record"

WP No. SV3-1242-ERW-1034028 Attachment B-1, "Raceways and Accessories Inspection Record Continuation Sheet – Raceways"

Section 1P04

SV3-ECS-E9-062-R2, "Cable Tray Notes and Details Sheet 1"

SV3-ECS-E9-064-R0, "Cable Tray Notes and Details Sheet 13"

SV3-G1-V8-001-R8, "AP1000 Electrical Installation Specification"

CR 50075971

CR 50083755

CAR 80004436

Section 1P05

WP SV3-1232-ERW-1021720, "U3 - AUX - Install -Label IE Conduits and Pull Boxes - ELEV. 100' 0" - Room 12302 - Area 2," Version 1.0

SV3-G1-V8-001 "AP1000 Electrical Installation Specification", Revision 8

26139-000-4MP-T81C-N3302, "Raceway and Accessories," Revision 11

26139-000-2QI-Q07CN3302, "Raceway and Accessories," Revision 5

Inspection Report Q445-19-11607, May 9, 2019
Purchase Order NPO-SV0-EJ01-Z4-201H
APP-GW-G1-003, AP1000 Seismic Design Criteria, Rev. 7
SV3-EJ01-V0-101, "AP1000 EJ01 Class 1E Pull Box Outline and Mounting Drawings,"
Revision 4
SVP-SV0-006208, "Evaluation of Junction Box SV3-1232-ER-CZP08 for ESR 50076220,"
02/04/2021

Drawings:

SV3-1232-ER-104, Auxiliary Building Area 2 Class 1E Conduit Arrangement Plan at Elevation 100'-0" Room 12302, Rev. 8
SV3-1232-ER-602, Auxiliary Building Area 2 El. 100'-0" Conduit Supports Plan View (Sheet 2), Rev. 6
SV3-1232-ER-604, Auxiliary Building Area 2 El. 100'-0" Conduit Supports Plan View (Sheet 4), Rev. 5
SV3-1232-ER-605, Auxiliary Building Area 2 El. 100'-0" Conduit Supports Plan View (Sheet 5), Rev. 5
SV3-1232-ER-606, Auxiliary Building Area 2 El. 100'-0" Conduit Supports Plan View (Sheet 6), Rev. 4
SV3-1232-ER-607, Auxiliary Building Area 2 El. 100'-0" Conduit Supports Plan View (Sheet 7), Rev. 4
SV3-1232-ER-608, Auxiliary Building Area 2 El. 100'-0" Conduit Supports Plan View (Sheet 8), Rev. 4

SV3-ECS-E9-030, Conduit Notes and Details, Rev. 13
SV3-ECS-E9-033, Conduit Notes and Details (Sheet 4), Rev. 14
SV3-ECS-E9-040, Electrical Raceway and Cable Identification Markers, Rev. 5
SV3-RXS-E5-JENE001, COMBINED WIRING DIAGRAM APP-RXS-JE-NE NIC POWER RANGE NEUTRON DETECTOR SH 1 OF 2, Rev. 2
SV3-RXS-E5-JENE002, COMBINED WIRING DIAGRAM APP-RXS-JE-NE NIC POWER RANGE NEUTRON DETECTOR SH 2 OF 2, Rev. 2
SV3-RXS-E5-JENE001C01, COMBINED WIRING DIAGRAM APP-RXS-JE-NE001C NIC SOURCE RANGE NEUTRON DETECTOR DIVISION "C", Rev. 2
SV3-RXS-E5-JENE002C01, COMBINED WIRING DIAGRAM APP-RXS-JE-NE002C NIC INTERMEDIATE RANGE NEUTRON DETECTOR DIVISION "C", Rev. 2

Condition Reports:

CR 50077190
CR 50075381
CR 50065132
CR 50062530
CR 50061811
CR 50058215
CR 50057411
CR 50073817
CR 50066999
CR 50075790

Nonconformance and Disposition Reports:

SV3-DB01-GNR-000004, IDS Spare Battery Rack Misaligned Channel Nuts (ESR 50057274), Rev. 0

SV3-DB01-GNR-000005, IDS Div. C Battery Rack Misaligned Channel Nuts (ESR 50057274), Rev. 0

SV3-DB01-GNR-000008, IDS Div. B Battery Rack Misaligned Channel Nuts - Rm.12204 (ESR 50057274), Rev. 0

SV3-DB01-GNR-000010, IDS Div. B 24HR Battery Rack Misaligned Channel Nuts - Rm.12104 (ESR 50057274), Rev. 0

SV3-DB01-GNR-000011, IDS Div. D 24HR Battery Rack Misaligned Channel Nuts - Rm.12105 (ESR 50057274), Rev. 0

SV3-DB01-GNR-000012, IDS Div. A 24HR Battery Rack Misaligned Channel Nuts - Rm.12101 (ESR 50057274), Rev. 0

SV3-DB01-GNR-000013, IDS Div. C 24HR Battery Rack Misaligned Channel Nuts - Rm.12102 (ESR 50057274). Rev.0

LIST OF ACRONYMS

ACI	American Concrete Institute
ANI	Authorized Nuclear Inspector
ASME	American Society of Mechanical Engineers
AWS	American Welding Society
CAP	Corrective Action Program
CAR	Corrective Action Record
COL	Combined License
CR	Condition Report
E&DCR	Engineering & Design Coordination Report
ESR	Engineering Service Requests
FAT	Factory Acceptance Test
FCN	Field Change Notice
IEEE	Institute of Electrical and Electronic Engineers
ISB	Isolation Barrier Assemblies
IMC	Inspection Manual Chapter
ITAAC	Inspections, Tests, Analysis, and Inspection Criteria
NRC	Nuclear Regulatory Commission
PCI	PCI Energy Services
PCS	Passive Containment Cooling System
PLS	Plant Control System
PMS	Protection and Safety Monitoring System
PXS	Passive Core Cooling System
QA	Quality Assurance
QC	Quality Control
RCP	Reactor Coolant Pump
RCS	Reactor Coolant System
RXS	Reactor System
SRV	Safety Relief Valve
SSC	Structures, Systems, and Components
S&W	Stone and Webster
TE	Technical Evaluation
UFSAR	Updated Final Safety Analysis Report
URI	Unresolved Item
VEGP	Vogtle Electric Generating Plant
WEC	Westinghouse Electric Company
WPS	Welding Procedure Specification

ITAAC INSPECTED

No.	ITAAC No.	Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
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13	2.1.02.02a	<p>2.a) The components identified in Table 2.1.2-1 as ASME Code Section III are designed and constructed in accordance with ASME Code Section III requirements. 2.b) The piping identified in Table 2.1.2-2 as ASME Code Section III is designed and constructed in accordance with ASME Code Section III requirements. 3.a) Pressure boundary welds in components identified in Table 2.1.2-1 as ASME Code Section III meet ASME Code Section III requirements. 3.b) Pressure boundary welds in piping identified in Table 2.1.2-2 as ASME Code Section III meet ASME Code Section III requirements. 4.a) The components identified in Table 2.1.2-1 as ASME Code Section III retain their pressure boundary integrity at their design pressure. 4.b) The piping identified in Table 2.1.2-2 as ASME Code Section III retains its pressure boundary integrity at its design pressure. 5.b) Each of the lines identified in Table 2.1.2-2 for which functional capability is required is designed</p>	<p>Inspection will be conducted of the as-built components and piping as documented in the ASME design reports. Inspection of the as-built pressure boundary welds will be performed in accordance with the ASME Code Section III. A hydrostatic test will be performed on the components and piping required by the ASME Code Section III to be hydrostatically tested. Inspection will be performed for the existence of a report verifying that the as-built piping meets the requirements for functional capability. Inspection will be performed for the existence of an LBB evaluation report or an evaluation report on the protection from dynamic effects of a pipe break. Section 3.3, Nuclear Island Buildings, contains the design descriptions and inspections, tests, analyses, and acceptance criteria for protection from the dynamic effects of pipe rupture.</p>	<p>The ASME Code Section III design reports exist for the as-built components and piping identified in Tables 2.1.2-1 and 2.1.2-2 as ASME Code Section III. A report exists and concludes that the ASME Code Section III requirements are met for non-destructive examination of pressure boundary welds. A report exists and concludes that the results of the hydrostatic test of the components and piping identified in Table 2.1.2-1 and Table 2.1.2-2 as ASME Code Section III conform with the requirements of the ASME Code Section III. A report exists and concludes that each of the as-built lines identified in Table 2.1.2-2 for which functional capability is required meets the requirements for functional capability. An LBB evaluation report exists and concludes that the LBB acceptance criteria are met by the as-built RCS piping and piping materials, or a pipe break evaluation report exists and concludes that protection from the dynamic effects</p>
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No.	ITAAC No.	Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
		to withstand combined normal and seismic design basis loads without a loss of its functional capability. 6. Each of the as-built lines identified in Table 2.1.2-2 as designed for LBB meets the LBB criteria, or an evaluation is performed of the protection from the dynamic effects of a rupture of the line.		of a line break is provided.
534	2.5.02.07a	7.a) The PMS provides process signals to the PLS through isolation devices.	Type tests, analyses, or a combination of type tests and analyses of the isolation devices will be performed.	A report exists and concludes that the isolation devices prevent credible faults from propagating into the PMS.
538	2.5.02.07e	7.e) The PMS receives signals from non-safety equipment that provides interlocks for PMS test functions through isolation devices.	Type tests, analyses, or a combination of type tests and analyses of the isolation devices will be performed.	A report exists and concludes that the isolation devices prevent credible faults from propagating into the PMS.

No.	ITAAC No.	Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
761	3.3.00.02a.i.b	2.a) The nuclear island structures, including the critical sections listed in Table 3.3-7, are seismic Category I and are designed and constructed to withstand design basis loads as specified in the Design Description, without loss of structural integrity and the safety-related functions. 3.) Walls and floors of the nuclear island structures as defined on Table 3.3-1 except for designed openings or penetrations, provide shielding during normal operations.	i) An inspection of the nuclear island structures will be performed. Deviations from the design due to as-built conditions will be analyzed for the design basis loads, and for radiation shielding.	i.b) A report exists which reconciles deviations during construction, including Table 3.3-1 wall and floor thicknesses, and concludes that the as-built shield building structures, including the critical sections, conform to the approved design and will withstand the design basis loads specified in the Design Description without loss of structural integrity or the safety-related functions, and without impacting compliance with the radiation protection licensing basis.

No.	ITAAC No.	Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
763	3.3.00.02a.i.d	2.a) The nuclear island structures, including the critical sections listed in Table 3.3-7, are seismic Category I and are designed and constructed to withstand design basis loads as specified in the Design Description, without loss of structural integrity and the safety-related functions. 3.) Walls and floors of the nuclear island structures as defined on Table 3.3-1 except for designed openings or penetrations, provide shielding during normal operations.	i) An inspection of the nuclear island structures will be performed. Deviations from the design due to as-built conditions will be analyzed for the design basis loads, and for radiation shielding.	i.d) A report exists which reconciles deviations during construction, including Table 3.3-1 wall and floor thicknesses, and concludes that the as-built structures in the radiologically controlled area of the auxiliary building, including the critical sections, conform to the approved design and will withstand the design basis loads specified in the Design Description without loss of structural integrity or the safety-related functions, and without impacting compliance with the radiation protection licensing basis.